



Indices Exam Questions Sheet 2

Q1.

(a) Find the value of $16^{-\frac{1}{4}}$

(2)

(b) Simplify $x(2x^{-\frac{1}{4}})^4$

(2)

(Total 4 marks)

Q2.

Given that $32\sqrt{2} = 2^a$, find the value of a .

(3)

(Total 3 marks)

Q3.

Express 8^{2x+3} in the form 2^y , stating y in terms of x .

(2)

(Total 2 marks)

Q4.

Solve

(a) $2^y = 8$

(1)

(b) $2^x \times 4^{x+1} = 8$

(4)

(Total 5 marks)

Q5.

Given that $y = 2^x$,

(a) express 4^x in terms of y .

(1)

(b) Hence, or otherwise, solve

$$8(4^x) - 9(2^x) + 1 = 0$$

(4)

(Total for question = 5 marks)



Q6.

Express 9^{3x+1} in the form 3^y , giving y in the form $ax + b$, where a and b are constants.

(2)

(Total for question = 2 marks)

Q7.

(a) Given $y = 2^x$, show that

$$2^{2x+1} - 17(2^x) + 8 = 0$$

can be written in the form

$$2y^2 - 17y + 8 = 0$$

(2)

(b) Hence solve

$$2^{2x+1} - 17(2^x) + 8 = 0$$

(4)

(Total for question = 6 marks)